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December 18 1997

Mr Steven E Kinser R G
Remedial Project Manager
Missouri/Kansas Remedial Branch
Superfund Division
U S Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City Kansas 66101

Site	West Lake Landfill
ID #	MODU7990E932
Inst	3.4
Other	Comment
	12-18-97

0714

**RE Responses to Comments on the
Site Characterization Summary Report
West Lake Landfill OU-1 RI/FS
Bridgeton Missouri**



40052878
SUPERFUND RECORDS

Dear Mr Kinser

On behalf of Cotter Corporation (N S L) Laidlaw Waste Systems (Bridgeton) Inc Rock Road Industries Inc and the United States Department of Energy (the Respondents) Engineering Management Support Inc (EMSI) has prepared responses to EPA s October 24 1997 comments on the Site Characterization Summary Report (SCSR) for Operable Unit 1 (OU-1) at the West Lake Landfill in Bridgeton Missouri dated August 27 1997 The responses to your comments are based in part upon the discussions we had at our November 21 1997 meeting at your office For ease of review we have included both your original comment as presented in your letter and our response to each comment in this letter

Comment

Section 2 Have all the data from the reports listed in this section been incorporated into this site characterization summary?

Response

All of the reports and other documents listed in Section 2 of the SCSR were reviewed and considered during the preparation of the SCSR Much of information and evaluations presented in the SCSR are based upon information contained in these various reports The only exception to this is the evaluation of the nature and extent of contamination associated with OU-1 These evaluations and discussions are based solely

upon the field and laboratory data developed as part of the Remedial Investigation (RI) effort. Given the potential for data comparability issues associated with the results obtained from other investigative efforts with the results obtained from the RI effort, no attempt was made in the SCSR to integrate the various sets of analytical results into one data base or to evaluate the nature and extent of contamination based on potentially disparate results.

It is our intent as part of the RI effort to further review the results of other investigative efforts and to compare these results to the results of the RI effort to assess the representativeness of the RI data. To the extent that the results of other investigations are not completely comparable with the RI data and potentially indicate that alternative interpretations may need to be considered, this would be presented and discussed in the RI report; however, it is our expectation that the evaluation of the nature and extent of contamination associated with OU 1 will be based primarily upon the results of the RI testing and analyses.

Comment

Section 3 General – May want to include location of Ford Property on Figures 3-2 or 3-3

Response

We agree with this comment and will show either the location of the property owned by Ford or the particular area of interest relative to the West Lake OU-1 RI/FS that is referred to as the Ford Property on the appropriate figures in the RI report.

Comment

Section 3.3.2 Surface Soils last paragraph - A physical description of the soil materials observed as cover material on Areas 1 and 2 would be helpful

Response

We agree with the comment and such a description will be added to the RI report.

Comment

Section 3.4.1 Bedrock Geology – This section could be more specific to the site and include information such as the depth to bed rock (bedrock surface map) name and descriptions of the rock formation directly underlying the site including structure or the text could reference the Geology Section (Section 4.1) of the Physical Characterization Technical Memorandum for West Lake Landfill OU-2 prepared by Golder-Associates dated August 1996

Response

We agree with the comment and the requested additional discussions as well as a reference to the geology discussion in the aforementioned Golder Associates report will be included in the RI report

Comment

Section 3.4.3 Site Hydrogeology - Average groundwater elevations (relative to Mean Sea Level) would be helpful along with a potentiometric surface map indicating the average groundwater flow directions and gradients. In addition with the hydraulic conductivity values calculated from the slug test data along with groundwater gradients from a potentiometric surface map and an assumed effective porosity average groundwater flow velocities could be calculated

Specific information from or reference to the Site Hydrogeology Section (Section 4.2) of the Physical Characterization Technical Memorandum for West Lake Landfill OU-2 prepared by Golder Associates dated August 1996 may also want to be included in this section

Response

We agree with the comment and the requested additional discussions as well as a reference to the hydrogeology discussion in the aforementioned Golder Associates report will be included in the RI report

Comment

Section 4 General – The use of the term reference levels based upon mill tailings is not something the Environmental Protection Agency (EPA) has agreed as appropriate and most likely will not be the standard for remediation at the site. No change will be required for this report but it should not be assumed that the reference levels used in this

*report will have any bearing upon those used in the RI/FS or in future remedial actions
Please refer to OSWER Directive 9200 5-144*

Response

The concept of reference levels was used in the Soil Boring/ Surface Soil Investigation Report West Lake Landfill Areas 1 and 2 prepared by McLaren/Hart in November 1996 the Interim Investigation Results Technical Memorandum West Lake Landfill Operable Unit 1 prepared by EMSI in January 1997 as well as the Site Characterization Summary Report as a means of readily and uniformly estimating the potential extent of contamination associated with OU 1. The term reference levels as used in these reports is based upon promulgated standards contained in EPA's Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (40 CFR 192). These standards were considered useful for the evaluation of the nature and extent of contamination for the following reasons:

- 1 They are the only established numerical standards for radionuclides in soils and
- 2 Although they were promulgated for mill tailings these standards have been considered to be relevant and appropriate criteria for radionuclide occurrences at other radiologically impacted sites and thus potentially are likely to be a chemical-specific applicable or relevant and appropriate requirement (ARAR) for West Lake OU-1.

Although reference levels were used in the Site Characterization Summary Report and prior RI/FS reports for OU 1 to assess and estimate the nature and extent of contamination, no assumption has been made at this time that the reference levels presented in these reports have any significance relative to the potential remediation standards for the site. Remediation standards for the site will be selected by EPA as part of the Record of Decision (ROD) and will be based upon the nine criteria contained in the National Contingency Plan (NCP). The two most significant of these nine criteria are protection of public health and compliance with ARARs which together will be used to define the remediation standards to be selected by EPA in the ROD. Reference levels have been and will anticipate will continue to be used to provide a general estimate of the nature and extent of the contamination that will be addressed in the FS. The exact nature and extent of the contamination to be addressed during the remedy selection process will be based on the results of the Baseline Risk Assessment that is currently being completed as well as potential ARARs.

The Respondents and EMSI clearly recognize that the reference levels presented in the Site Characterization Summary Report and prior RI/FS reports for OU-1 and that will likely be included in the draft RI and possibly FS reports are presented as a point of reference only for use in evaluation of the site investigation data and to make general estimates of the nature and extent of contamination associated with OU 1. This

acknowledgement is contained on pages 35 and 36 of the Site Characterization Summary Report and was included in all of the other RI/FS reports containing any use of the term reference levels

Comment

Section 4.1.1 Area 1 Subsurface Source Distribution 3rd paragraph 2^d sentence – Should the reference be to subsurface soil sample analytical results instead of surface samples as it is basis for delineating the approximate region of elevated radionuclide activity?

Response

The comment is correct. The sentence does address subsurface sample results not surface soil results. The text will be correct in the draft RI report.

Comment

Section 4.2.1 Area 2 Surface Source Distribution 2nd paragraph – Even though the presence of the radionuclides detected in the surface soil samples collected at locations WL-242, WL-243 and WL-244 are thought to be associated with the deposition of runoff sediments as opposed to surface exposure of in-place material, they are still a source of surface exposure and may want to be classified as a separate area or radionuclides in Figure 4-1.

Response

We agree with this comment and the requested additional delineation and associated discussions will be included in the RI report.

Comment

Section 4.2.3 Ford Property Source Distribution 2nd paragraph – Does this mean that the analytical results from the samples collected at the FP sample locations confirms the analytical results of samples collected at WL-206?

Response

In general the analytical results obtained for the samples from boring WL-206 are consistent with the analytical results for the samples obtained from the FP locations. The only exception is the thorium-230 result (429 pCi/gm) from the surface sample obtained at the WL-206 location which was 15 times the level of thorium-230 found in any of the FP location samples. Given that other radionuclides were also detected in higher levels in the WL-206 sample compared to the levels found in the FP samples although not to the same degree or magnitude as the thorium-230 we have assumed that the thorium 230 value for the surface sample from WL-206 is correct.

Comment

Section 5.1.1.1 Surface Emission of Radon Gas – A figure depicting the location of all radon flux measuring points would be helpful

Response

We agree with the comment and the suggested figure will be included in the RI report.

Comment

Section 5.2 Direct Exposure to Source Materials – This exposure pathway may require further evaluation in the Feasibility Study also with respect to Short-term Effectiveness primary evaluation criteria in which all alternatives are evaluated against

Response

We agree with the comment and the additional evaluation will be included in the Feasibility Study.

Comment

Section 5.4.1.1 Area 1 Surface Drainage 2nd paragraph last sentence – The data would indicate that there is some heterogeneity within the distribution of radionuclides in the two soil samples but for risk assessment purposes a conservative approach would be to go with the higher of each of the two analytical results instead of averaging the values. Two data points within a statistical population is not a particularly reasonable approach

Response

We agree that occurrences of radionuclides within the Site sediments as well as many other Site matrices are subject to small scale heterogeneity. We do not agree that for risk assessment purposes only the higher of the two values should be used. The risk assessment will have to be based upon appropriate representations of the radionuclide activity associated with each potential exposure pathway. Typically this is conducted looking at mean values of a sample population as a representation of the typical exposure and the upper 95% confidence interval of the sample population as the reasonable maximum exposure. It is highly unlikely that an individual would be exposed solely and continuously to only the highest observed radionuclide activity levels over a period of 30 or more years examined for carcinogenic risks but rather would more likely be exposed to the average activity levels over such an extended period of time. The potential uncertainty or bias associated with the analytical results such as that which may be presented by a high value greater than the mean or possibly the upper 95% confidence interval will be addressed in the uncertainty section of the risk assessment.

Comment

Section 5.5.1 Leaching to Groundwater and Subsequent Off-site Transport – A discussion of groundwater flow direction and velocity with respect to monitoring well D-6 should be included in this section to assist in the evaluation of contaminant fate and transport.

Response

We agree with the comment and the requested additional discussion will be included in the RI report.

Comment

Section 6.1.2 Subsurface Setting – As stated in previous comment, this section should be more specific to the site or reference the site-specific information presented in the report Physical Characterization Technical Memorandum for West Lake Landfill OU-2 prepared by Golder Associates dated August 1996.

Response

We agree with the comment and the requested additional discussions as well as a reference to the Golder Associates report will be included in the RI report.

Comment

Section 6.2 Contaminant Sources 2nd paragraph 2nd sentence – Should this refer to Area 2 instead of Area 1 as written?

Response

The sentence should have referred to Area 2 and not Area 1. This will be corrected in the RI report.

Comment

Section 6.4 Potential Exposure Pathways – A more detailed description of the groundwater flow mechanics i.e. occurrence, flow direction, gradients, and velocity should be included prior to dismissing groundwater as a viable exposure pathway.

Response

We agree with the comment and the additional descriptions will be included in the RI report.

We trust that these responses adequately and appropriately address your comments. If you have any additional thoughts, questions, or comments that you would like us to address prior to release of the draft RI report, please do not hesitate to contact me.

Sincerely,
ENGINEERING MANAGEMENT SUPPORT, INC

A handwritten signature in black ink, appearing to read 'Paul V. Rosasco', is written over a rectangular stamp area.

Paul V. Rosasco, P.E.
Principal Engineer

cc

John Niffenegger – Sverdrup
Jalal El-Jayyousi MDNR
Doug Borro - Allied Waste Industries Inc
Ward Herst - Water Management Consultants
Michael Hockley Spencer Fane Britt & Browne
Steve Landau - Cotter Corporation
Charlotte Neitzel - Holme Roberts & Owen
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